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Federal Communications Commission  
Office of Secretary

# VOLUME 2

## TABS 7-15



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FEB 25 1998

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, D.C. 20554

Federal Communications Commission  
Office of Secretary

EX PARTE OR LATE FILED

In the Matter of Application of SBC Communications Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc., d/b/a/ Southwestern Bell Long Distance, for Provision of In-Region, InterLATA Services in Oklahoma	CC Docket No. _____
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**AFFIDAVIT OF GARY A. FLEMING**

**STATE OF OKLAHOMA**

**COUNTY OF OKLAHOMA**

I, GARY A. FLEMING, being of lawful age and duly sworn upon my oath, do hereby depose and state:

1. My name is Gary A. Fleming, my business address is Room 423, 800 N. Harvey, Oklahoma City, Oklahoma 73102. I am the Director - Number Portability for Southwestern Bell Telephone Company ("SWBT"). In this position I am responsible for the planning, policy development and implementation of Local Number Portability within SWBT's five state service area, including the states of Missouri, Oklahoma, Kansas, Arkansas and Texas. In this position, I have also participated in numerous ex parte meetings with the FCC and in informational meetings with the Oklahoma, Missouri and Texas commissions.
2. I have a Bachelor of Science - General Engineering degree from Oklahoma State University, College of Engineering. I have also completed training conducted by the Bell System, AT&T, Northern Telecom, Bellcore and Southwestern Bell Telephone on network switching systems.

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3. I have been employed by Southwestern Bell for over 25 years with the preponderance of my experience in network related fields including network administration, design, operations and planning. This also includes four years experience at Bellcore where I worked in the North American Numbering Plan Administration and as moderator of the Industry Carriers Compatibility Forum (ICCF) dealing with technical interconnection and numbering issues.

#### **PURPOSE OF AFFIDAVIT**

4. Checklist item (xi) requires :

Until the date by which the Commission issues regulations pursuant to section 251 to require number portability, interim telecommunications number portability through remote call forwarding, direct inward dialing trunks, or other comparable arrangements, with as little impairment of functioning, quality, reliability, and convenience as possible. After that date, full compliance with such regulations.

5. The purpose of my affidavit is to demonstrate the reasonable and timely steps taken by SWBT to meet its obligations for the deployment of long term number portability, in accordance with the Act and with all applicable FCC rules and regulations. I will discuss the number portability method being utilized by SWBT, the network requirements for implementation of that methodology, and SWBT's activities to meet the deployment obligations established by the FCC's First Report and Order (released July 2, 1996), First Reconsideration Order (released March 11, 1997) and Second Report and Order (released August 18, 1997) in CC Docket No. 95-116. I further will provide specific information concerning current number portability deployment activities in SWBT's five state service area of Missouri, Oklahoma, Kansas, Arkansas, and Texas, including the schedule for inter/intraLATA inter-carrier testing; the status of the switch

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request/identification process; the status of deployment in requested switches and SWBT's schedule for commercial roll-out.

## **NUMBER PORTABILITY REQUIREMENTS**

6. The Act defines number portability as "the ability of users of telecommunications services to retain, at the same location, existing telecommunications numbers without impairment of quality, reliability, or convenience when switching from one telecommunications carrier to another." Under the Act and FCC rules, Local Exchange Carriers (LEC) are required to implement "long term Number Portability" (LNP). Implementation of LNP is a matter of enormous scope and technical complexity, involving development, modification and deployment of new software and/or hardware by multiple suppliers for every switching and signaling network component within SWBT's network, in addition to the provision of several new network components. It also requires modification and development of ordering, provisioning, billing and service assurance systems which by itself is a task of enormous proportions. In basic terms, I believe this to be the biggest, most complex and costly undertaking in the history of the telecommunications industry.
7. The obligations established in the FCC's orders on LNP include the following:
  - a) specific performance criteria
  - b) implementation rules and schedule
    - i) number portability deployment schedule for the 100 largest Metropolitan Statistical Areas (MSA)
    - ii) waiver relief process
    - iii) switch selection rules for the 100 largest MSAs

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- iv) implementation rules for MSAs beyond the initial 100
- v) adherence to technical, operational, architectural and administrative requirements established in the Second Report and Order by the FCC

## PERFORMANCE CRITERIA

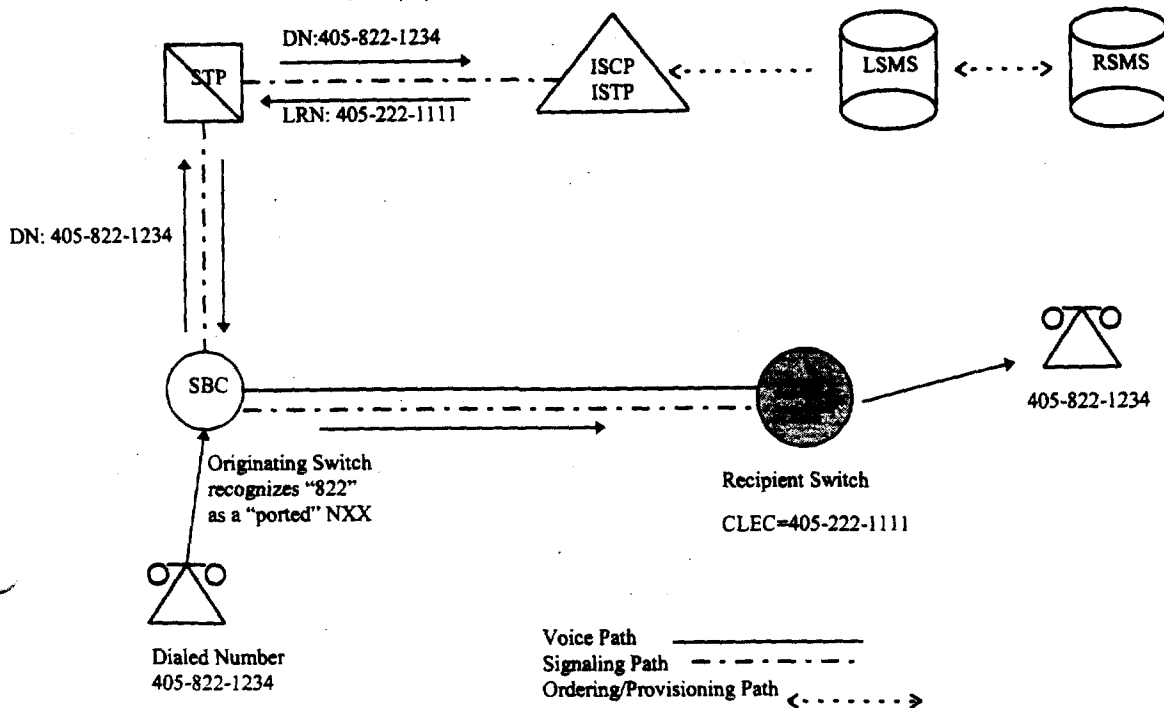
8. In its First Report and Order, the FCC set forth nine performance criteria and established the obligation that carriers providing number portability must meet those performance criteria. The FCC acknowledged the planned use within the industry of Location Routing Number (LRN) for providing number portability, and precluded the Query on Release (QoR) method. In its First Reconsideration Order, the FCC removed criterion four,<sup>1</sup> reaffirmed the prohibition of QoR, and reaffirmed the obligation that the remaining eight performance criteria must be met.
9. The FCC judged LRN to be consistent with the performance criteria it had established in the First Reconsideration Order. SWBT is complying with the eight criteria set forth by the FCC through its use of the LRN method for providing number portability.
10. With LRN, an end user remaining at the same location who changes to a different local service provider may retain or "port" their existing telephone number. Porting is accomplished by the assignment of a LRN to each ported telephone number which identifies the central office switch of the end user's service provider. The LRN is of a format NXX-NXX-XXXX where "N" represents the digits 2-9 and "X" represents the digits 0-9. The first six digits are comprised of an NPA-NXX assigned to the new local service provider's switch. The last four digits of the LRN are not currently used for

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<sup>1</sup> Criterion four required that any long-term number portability methods must not require telecommunications carriers to rely on databases, other network facilities, or services provided by other telecommunications carriers in order to route calls to the proper termination point. Based on an analysis of the record, the FCC concluded that criterion four should be removed because all interconnected carriers are likely to rely upon each other's networks to

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routing and therefore may be assigned any value. Generally, all numbers ported to the same switch will be assigned the same LRN. Following is a diagram and additional explanation to help describe how the LRN method of providing number portability works.



Note: The network component parts illustrated above are defined in paragraph 16 of this document.

11. The new service provider supplies the database with the ported telephone number and the associated LRN. In addition, the database is also provided with Destination Point Codes (DPC) for CLASS features (e.g., Automatic Callback/Automatic Recall) and Line Information Database (LIDB) Translation Capabilities Application Port (TCAP) messages. This information is downloaded to all number portability databases serving the area of portability. When a call is originated to a portable NXX, an Advanced

some extent to process and route calls in a market in which a long term number portability method has been deployed.

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Intelligent Network (AIN) trigger causes a query to be launched to the number portability database. If the call is to a ported telephone number, the database response will contain the LRN. The LRN will then be used by the network to route the call to the correct central office. If the call is to a non-porting number, the database returns a continue message and the call is routed based on the dialed digits.

## IMPLEMENTATION RULES AND SCHEDULE

12. The FCC directed that number portability implementation is to commence in the 100 largest MSAs according to a phased deployment schedule that begins October 1, 1997, and concludes December 31, 1998. SWBT has taken proactive and prudent steps to ensure that it meets the FCC required implementation schedules for number portability in the top 100 MSAs. The schedule for implementing number portability in the SWBT five-state area is as follows:

Phase I - 10/1/97-3/31/98	Houston, TX
Phase II - 1/1/98-5/15/98	Dallas, TX St. Louis, MO
Phase III - 4/1/98-6/30/98	Kansas City, KS/MO Fort Worth, TX
Phase IV - 7/1/98-9/30/98	(West) Memphis, AR San Antonio, TX Oklahoma City, OK Austin, TX
Phase V - 10/1/98 - 12/31/98	Tulsa, OK El Paso, TX Little Rock, AR Wichita, KS

13. The FCC established a process in its First Report and Order and Further Notice of Proposed Rulemaking to waive or stay any of the dates in the implementation schedule as it determines is necessary to ensure the efficient development of LNP. A carrier unable



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to meet deadlines may file with the FCC to extend the implementation schedule for a period not to exceed nine months. The carrier must be able to demonstrate extraordinary circumstances beyond its control in order to obtain an extension. The order also established specific criteria that a petition must address.

14. In the First Reconsideration Order the FCC concluded that LECs need only provide number portability within the largest 100 MSAs in switches for which another certified wireline or CMRS carrier has made a specific request for the provision of portability. The FCC also set forth basic minimum criteria for the switch selection process. The state commissions were charged with developing the most efficient procedures, overseeing the switch selection process and reviewing the switch requests to insure that the requests are reasonable. Switch selections are required to be completed no later than nine months prior to the implementation deadline for each MSA. The order also provided that carriers may negotiate agreements to exclude specific switches within the MSA in exchange for conversion of additional switches within or outside of the MSA.
15. SWBT has actively participated in the switch selection process. In accordance with FCC requirements, SWBT prepared lists of its switches located within the designated MSAs. SWBT sent these lists to the state commissions who distributed them as switch surveys to the carriers operating within the MSAs. The switch surveys requested that the carriers select the switches where they would require number portability to be activated. Responses to the surveys were requested by the state commissions in accordance with the timelines designated by the FCC. The status of the switch selection process in the 13 MSAs in the SWBT serving area is shown in Appendix A.

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16. Switch selection is essential for number portability implementation, but it is only an initial step in a myriad of technical and administrative requirements that must be met so that number portability can be successfully deployed. Successful deployment requires that numerous other steps occur on a prearranged schedule, in close succession and within a specific time frame. SWBT has actively sought to establish the framework for number portability deployment in each of the five states served by SWBT, a process which has involved a high degree of coordination with the industry and state regulators. SWBT has assumed a leadership role in these efforts as co-chair of each state's number portability implementation team and through active participation and leadership in other Southwest Region number portability efforts. In addition to its work with the industry to establish administrative, operational and intra- and inter-company testing processes, SWBT has also initiated extensive internal network and support system modifications and additions required for implementation of the LRN method of number portability. Following is more information about these activities:

- a) Switches: Every selected end office switch must be equipped with LRN software. In some instances this change may also necessitate a processor upgrade or replacement. In addition, the tandem and operator service switches serving these customers must also be equipped. The number portability software loads, along with the required generic and hardware upgrades, have been scheduled to ensure compliance with the FCC Order.
- b) Signaling Transfer Points (STPs): The queries required for number portability will increase the capacity load on the STPs located in the area of portability. A Global Title Translation (GTT) and Message Relay Service (MRS) function must be

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provided in the LNP-capable STPs to properly route Signaling System 7 (SS7) messages that require LIDB or other database interactions such as CLASS, AIN and Alternate Billing Service (ABS) validation. Software load schedules for the STPs are included in the Test Timelines in Appendix A. Additional SS7 link ports to the portability databases and to the STPs are being provided where required to accommodate the increased load. In addition, SBC is currently planning to begin use of an integrated STP database as early as implementation of number portability for Phase II MSAs if vendor schedules permit.

- c) Number Portability Database: In the Houston MSA, SWBT is deploying number portability using the Intelligent Service Control Point (ISCP) to provide the LRN function and is using DSC Communications STPs to provide the MRS function. Number portability functionality for the remaining SWBT MSAs will be provided on the Integrated STP (ISTP). Both LRN and MRS functionality will be provided on the DSC Communications ISTP architecture for all MSAs except Houston. The future plan for the Houston MSA is to transition to the ISTP for both LRN and MRS functionality. This number portability plan of record is contingent upon vendor development to meet the required FCC number portability dates.
- d) Local Service Management System (LSMS): A new service management system developed for number portability, called the LSMS, provides provisioning functionality to the ISCP, STPs and ISTPs. It also provides operations, administration and maintenance (OA&M) functionalities. SWBT's LSMS is located in St. Louis.

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- e) Regional SMS (RSMS)/Number Portability Administration Center (NPAC): The RSMS or NPAC is a shared database administered by a neutral third party. The NPAC provider will administer and maintain the RSMS database which contains information on all ported numbers in a particular geographic area. This information is downloaded via the LSMS into the ISCP/ISTP databases. As indicated in paragraph 33 of the FCC's Second Report and Order, Lockheed Martin has been selected by the Southwest Region Portability Company (SRPC) Limited Liability Corporation (LLC) as the NPAC supplier for Arkansas, Kansas Missouri, Oklahoma and Texas. Interconnection testing between the LSMS and the RSMS for number portability service order activation and database downloads has been initiated.
- f) Testing: SWBT has worked extensively with the industry through the Southwest Region Network Operations Team and the state implementation teams to develop complete and thorough testing procedures and timelines. SWBT has begun extensive testing in Phase I and Phase II MSAs. The test plan and schedules for the initial MSAs to be deployed in the SWBT five state serving area is provided in Appendix A.
- g) Operational Support Systems (OSS): SWBT has also implemented extensive modifications in over 100 software applications for OSSs that provide ordering, provisioning, billing and service assurance functionalities required for the provision of number portability. In addition, as number portability requirements change there may be further OSS modifications required. The issue of non-discriminatory access to OSSs that support number portability is addressed in the affidavit of Ms. Elizabeth Ham.

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17. Current projections for the total cost to SWBT for implementation of number portability is estimated at \$588M. In 1997, SWBT incurred actual expenses of over \$130M. The magnitude of these expenditures serves to further demonstrate SWBT's intent and resolve to deploy number portability in a timely manner and in accordance with all applicable rules and regulations. Because of changes in vendor capabilities, CLEC switch selections, and query and porting loads, the actual costs ultimately incurred by SWBT may differ from these estimates.
18. SWBT is responsible for deploying number portability in a reasonable and responsible manner that minimizes the probability of a network outage. As indicated in Appendix B, the Bellcore Special Report SR-4257, "Quantification of the Effects of Local Number Portability on the Reliability of Southwestern Bell's Network", Issue 1, February 1997, extensions in software soak and testing can significantly reduce the probability of a catastrophic or FCC reportable network outage. Subsequently, the FCC explained in its First Reconsideration Order, paragraph 27, the importance of network reliability. It stated:

"...we are extending the implementation schedule for Phase I to allow carriers additional time to test number portability in a live environment, and to take appropriate steps to safeguard network reliability. Indeed, the Bellcore study submitted by SBC supports our conclusion that additional time for testing, integration, and soaking (limited use of the software in a live environment for a length of time sufficient to find initial defects) will help to reduce the probability of network failure."

In addition, in paragraph 83, the FCC reemphasized the importance of network reliability:

"Our decision to extend the deadlines for completing Phases I and II of our deployment schedule reflects the fact that we consider network reliability to be of paramount importance."

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19. SWBT's planned commercial ready-to-port dates were scheduled to begin in all selected switches within each MSA on the final day of the FCC mandated implementation schedules as shown in paragraph 12 and in the timelines included in Appendix A. These dates were selected to ensure effective use of the full implementation interval for testing and software soak and were contingent upon successful interoperability of vendor supplied network and system elements. During testing in the Houston MSA, failures in the interoperability of the MRS function in the STPs were uncovered. These failures cannot be remedied by the suppliers within the Houston implementation interval. As a result, we are assessing the impact and plan to request an extension from the FCC when we have sufficient information to determine when the problems can be remedied and LNP implementation completed.
20. As indicated in paragraph 16 and subject to the ability of suppliers to meet current schedules, SWBT plans to employ an integrated STP database solution beginning in Phase II, in order to reduce the cost of number portability. Because of the deployment of this new technology, extended testing intervals will be required for the Phase I and II MSAs to reduce the probability of service network outages. However, as we gain more experience with number portability implementation, we will continue to reassess dates for introduction of live commercial porting and advance them to the extent possible while maintaining the appropriate level of network reliability.
21. The FCC ruled that, after implementation of the initial 100 MSAs, each LEC must make number portability available in smaller MSAs within six months after a bona fide request has been made by another telecommunications carrier. In compliance with the FCC's rules, Service Provider Number Portability Service is addressed in Section 34 of the

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SWBT Access Service Tariff FCC No. 73. It stipulates that, where facilities permit, SWBT will provide portability in switches after the initial deployment schedule is accomplished, based on the following time frames:

- a) SWBT will equip remote switches within 30 days of a request.
  - b) SWBT will equip hardware capable switches within 60 days of a request.
  - c) SWBT will equip capable switches requiring hardware, and non-capable switches within 180 days of a request.
22. SWBT will continue to work aggressively to ensure that bona fide requests made by other carriers will be met within the time frame established by the FCC.

#### **TECHNICAL OPERATIONAL, ARCHITECTURAL & ADMINISTRATIVE REQUIREMENTS**

23. In its Second Report and Order, the FCC adopted with minor modifications several recommendations made by the NANC with regard to technical, operational, architectural and administrative requirements for number portability. The order adopted the NANC recommendation that Lockheed Martin serve as local number portability data base administrator for the Southwest Region (paragraph 33). Also, the FCC adopted the recommendations set forth in the Technical & Operational (T&O) Task Force and Architecture Task Force Reports. These technical, operational and administrative requirements included:
- a) NPAC provisioning process flows
  - b) Compliance with the Functional Requirements Specifications (FRS) and the Interoperable Interface Specifications (IIS)
  - c) Policy for porting of reserved and unassigned numbers

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- d) N-1 call routing obligations and default routing
  - e) Policy on the treatment of disconnected ported numbers
  - f) Change Management Process to ensure the consistent and uniform provision of number portability and that individual carriers or industry segments are not disadvantaged
24. SWBT has taken active steps to ensure compliance with the requirements contained in the Second Report and Order. SWBT played an active role within the NANC structure, including leadership roles and active participation in the NANC T&O Task Force, Architecture Task Force and LNPA Working Group in guiding development and resolution of these key portability requirements. As previously mentioned, SWBT has also been an active participant in the Southwest Region LLC and its selection of Lockheed Martin as the database administrator.
- a) SWBT has integrated the NPAC provisioning process flows into its ordering and provisioning operations support system modifications.
  - b) SWBT's implementation of number portability is in compliance with both the FRS and IIS.
  - c) SWBT has initiated efforts to mechanize the ability to port numbers reserved under a legally enforceable written agreement as specified by the NANC and adopted by the FCC.
  - d) SWBT has designed its network to handle queries required as the N-1 carrier and prearranged queries performed on behalf of other N-1 carriers. SWBT has also initiated plans to ensure that any network management controls required to prevent



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potential overload conditions as allowed by the FCC on default routed calls, are taken in a nondiscriminatory fashion.

- e) SWBT has also integrated the process for "snapback" of disconnected ported numbers to the service provider listed in the LERG for the assigned NXX until number pooling is provided. After number pooling is implemented, disconnected ported numbers are to snapback to the pool.
  - f) As co-chair of the T&O Task Force, SWBT is involved in directing the change management process in accordance with the provisions in the NANC recommendation which was adopted by the FCC.
25. The FCC also directed the NANC to address a number of open issues including High Volume Call In (HVCI) "choke" service porting, wireless integration into number portability and LLC oversight of the regional number portability administrators.
26. SWBT has proposed a method to the LNPA Working Group and the Southwest Region Network Operations Team for HVCI service number porting which serves the dual purpose of allowing portability while protecting the reliability of the network. SWBT has also been an active participant in the NANC Wireless/Wireline Integration Task Force from the outset and have worked to identify standards required for the integration of wireless and wireline service provider portability. Additionally, through our participation in the SRPC LLC as President, Project/Executive Manager and member, SWBT is meeting the FCC's interim requirement for immediate oversight by the LLC of the regional local number portability administrators.

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**SWBT PARTICIPATION IN INDUSTRY NUMBER PORTABILITY ACTIVITIES**

27. SWBT is also active in other regional and national efforts. For example, in addition to its involvement in the SRPC LLC as indicated above, SWBT has been an active participant in the Southwest Region Steering Committee and its subtending task forces. SWBT currently co-chairs state industry implementation teams for all five states. In addition to its participation in the NANC, SWBT is active on a national level in several other national industry efforts involved with LNP including the Ordering and Billing Forum (OBF), the Network Interconnection and Interoperability Forum (NIIF), the Industry Numbering Committee (INC) and T1 standards activities.
28. Through its active participation in regional and national portability issues, SWBT has become a leader in the efforts to analyze issues, develop policies and resolve problems that relate to number portability implementation. This activity demonstrates SWBT's continued commitment to comply with the FCC requirements on a timely basis.
29. This concludes my affidavit.

**(FLEMING) APPENDIX A**

Appendix A  
Number Portability Test Timeline

**SOUTHWESTERN BELL  
LONG TERM NUMBER  
PORTABILITY  
TESTING TIMELINE**

**Appendix A**  
**Number Portability Test Timeline**

**Number Portability Test Timeline Base**

**Assumptions:**

Assume complete and thorough Intra- and Inter-Company testing will be done in the MSAs with the selected test offices (one of each office type): 1AESS, 5ESS (including remotes), DMS100 (including remotes), Ericsson, TOPS, PSAP serving office and the Tandems.

**Vendor Installation Complete Date:**

Assumes all vendor/supplier hardware/software has been installed and accepted.

**Network Ready Date:**

Network ready date for test end, tandem and TOPS offices/all other offices, OSS systems, NPAC/RSMS, LSMS, ISCP and STP are production ready for Inter-Company interoperability flow-through and call flow testing.

**Appendix A**  
**Number Portability Test Timeline**

**Test Offices Start Test Date** assumes the 1AESS, 5ESS, DMS100, Ericsson, remotes, TOPS, PSAP serving office, and Tandem offices are ready for testing with the OSS systems, NPAC/RSMS, LSMS, ISCP and STP as they become ready for Intra-Company interoperability flow-through and call flow testing.

**Assume** SWBT will perform thorough Intra-Company interoperability testing on the remaining non-test switches at the start of begin Intra-Company Service Testing (all other offices). During this test period SWBT will also be testing with all carriers who have contracted with SWBT to perform LSMS/ISCP number portability functionality.

**Assume** 6-8 weeks Inter-Company Test Period. (This test period assumes all Intra-Company testing with the SWBT designated test offices has been successfully completed. The SWBT test offices will then be used to complete Inter-Company flow through and call flow tests with the CLEC designated test switches.)

## Appendix A

### Number Portability Test Timeline

**INITIAL NUMBER PORTABILITY DEPLOYMENT:** Incumbent LEC switches Targeted for Porting. Note: Switch surveys are administered by the state commissions. Competitive LECs will add their switch CLLI codes and switch types to the list and return to the state commissions. State commissions will publish results of switch surveys.

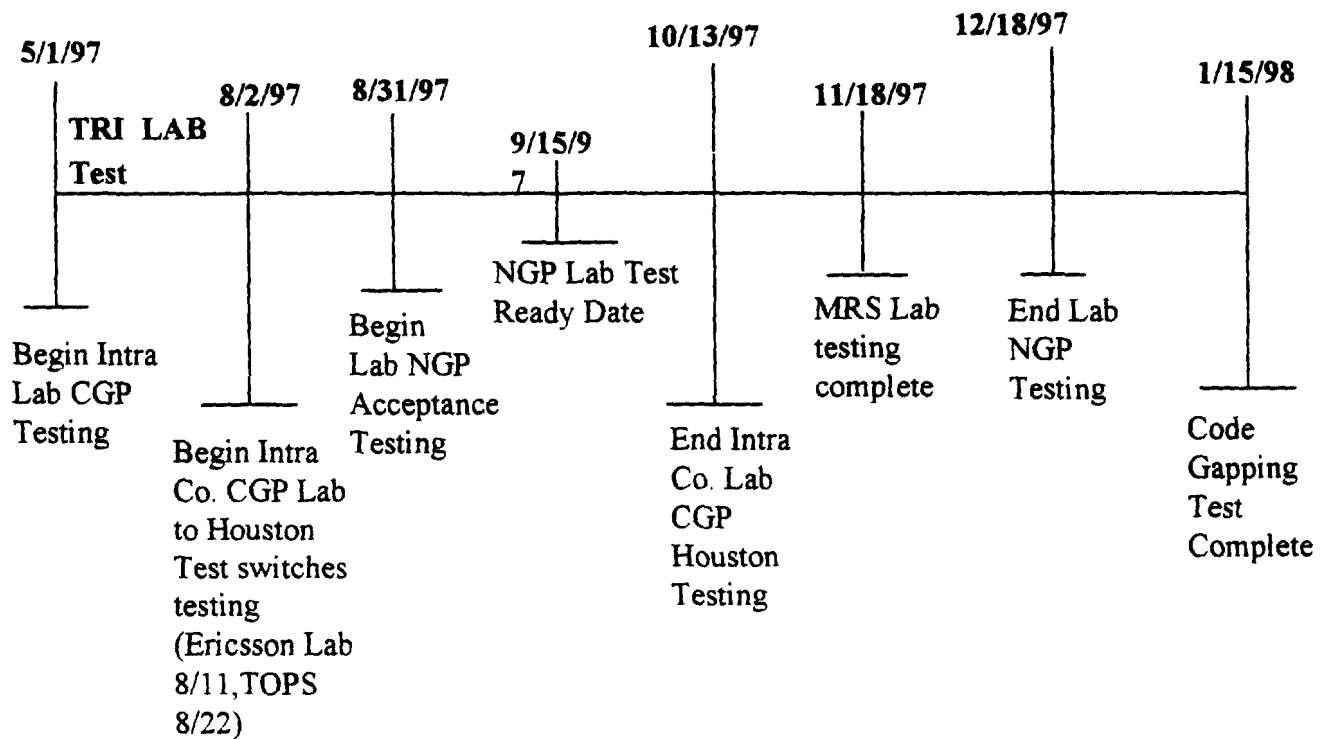
<u>MSA</u>	<u>SWITCH SELECTION STATUS</u>	<u>FCC REQUIRED DATE</u>
(Phase I) HOUSTON	Complete	6/30/97
(Phase II) DALLAS ST. LOUIS	Complete	8/15/97
(Phase III) FT. WORTH KANSAS CITY	Complete	9/30/97
(Phase IV) SAN ANTONIO MEMPHIS/OKC AUSTIN	Complete	12/31/97
(Phase V) WICHITA TULSA EL PASO LITTLE ROCK	Not Complete	3/30/98

**NOTE: Switches can be targeted up to the FCC Required Date.**

# Appendix A

## Number Portability Test Timeline

### LAB Test Timeline



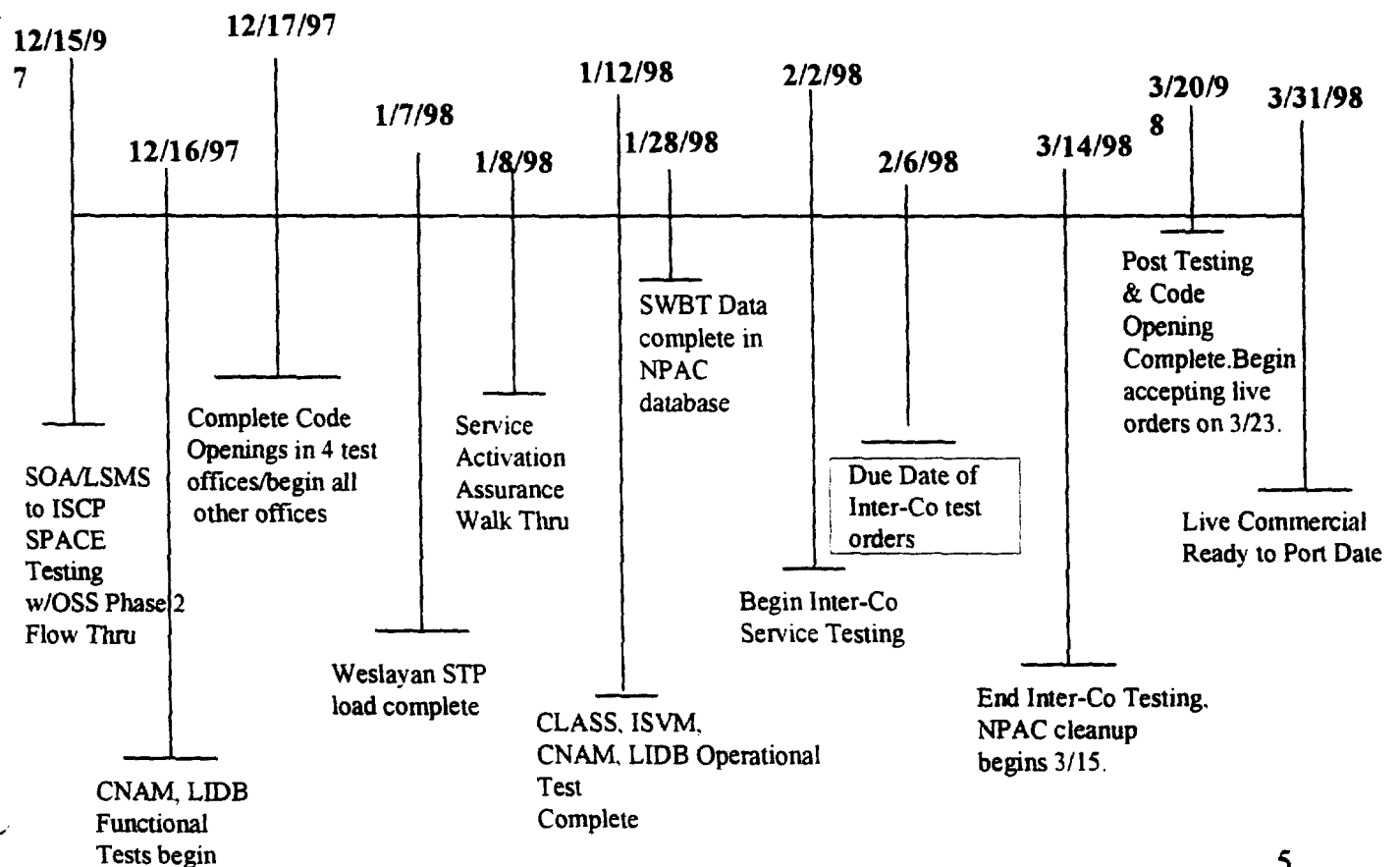
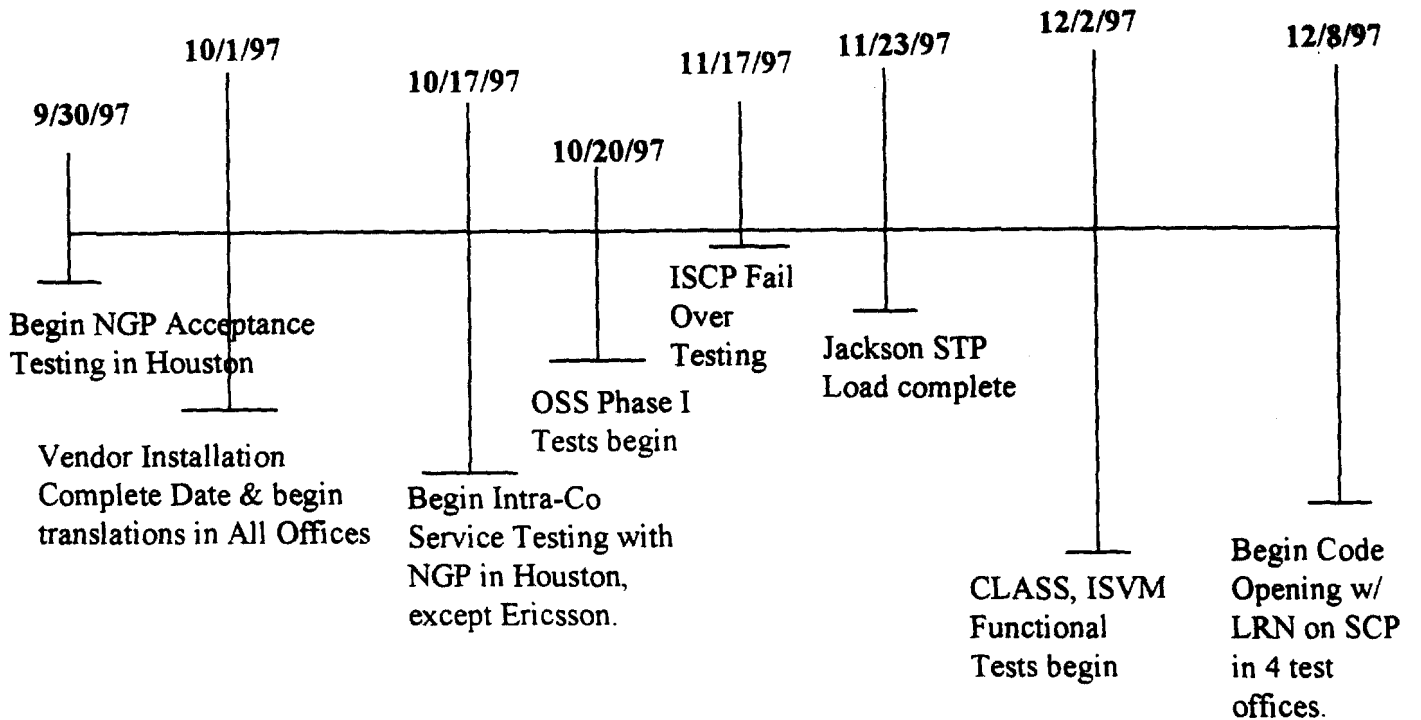


# Appendix A

## Number Portability Test Timeline

HOUSTON

Phase I MSA



Note: Regional STP Rel. 10 complete dates: Hiland 12/6, Tennyson 12/11, McGee 12/20 & Greenwood 1/4.